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RHEHAAA/WHITE HOUSE WASHDC
RUCPDC/NOAA WASHINGTON DC
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RHMFISS/COMUSKOREA SCJS SEOUL KOR
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SIPDIS

STATE FOR OES/IHB, OES/SAT, OES/PCI AND OES/EGC
STATE FOR EAP/K, ISN/NESS AND STAS
STATE PASS TO EPA FOR INTERNATIONAL PROGRAMS
WHITE HOUSE FOR OSTP AND CEQ
DOE FOR INTERNATIONAL, NE, FE, AND EERE
USDOC FOR 4400/MAC/EAP/OPB/ITA/TA
USDOC FOR NIST
HHS FOR OGHA
HHS PASS TO NIH FOR FIC
STATE PASS TO NSF FOR INTL PROGRAMS
STATE PASS TO NRC FOR INTL PROGRAMS

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SUBJECT: SEOUL ESTH UPDATE - DECEMBER 2009

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Energy and Environment

Wind to be Korea's Third Largest
Renewable Energy Source

¶1. In January 2008, Korea revised the goal of raising the share of new and renewable energy in its total energy equation from 2.6 percent in 2008 to 6 percent in 2020, and 11 percent in 2030. Korea's New and Renewable 2030 Vision stipulates wind energy to be developed and deployed as the third largest source of renewable energy in Korea, after waste incineration and biomass. To meet that goal, Korea plans to invest USD 161 million on wind energy during the 2008-12 period. Investments will focus on the development and manufacture of 1-MW, 2-MW, and 3-MW turbine systems and components.

12. The current total installed wind generation capacity in Korea is just 350 megawatts (MW), representing only 0.1 percent of the nation's electric demand. According to recent data of the Korea Institute of Energy Technology Evaluation and Planning, 206 wind turbines currently operate on 20 wind farms throughout the country. Unison Company, Ltd., a private wind energy developer in South Korea, has installed the biggest wind farm to date (49 2-MW wind turbines) in Kangwon Province. The company is in discussions to supply 1000 wind turbines to China over a 5-year period, a deal valued in some press reports as high as USD 3.2 billion. Separately on January 20, the Canadian province of Ontario selected Korea Electric Power Company (KEPCO) and Samsung Corporation to jointly build a large wind and solar power generation complex to be completed by 2016. The value of the contract is reportedly worth USD 5.5 billion.

World's Largest Tidal Power Plant To Be Built near Incheon

13. GS Engineering and Construction signed an MOU with state-run Korea Hydro and Nuclear Power (KHNP) on January 20 to begin construction this year on a 1.3 million kilowatt/hour tidal power station of the coast of Incheon, which will generate the equivalent of 60 percent of Incheon's household electricity consumption by the time of its completion in 2017. The facility will be the world's largest tidal power plant in terms of electricity generation. Currently, the largest tidal power plant in the world (and the

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oldest) is the Rance Tidal Power Station in France with 400,000 kw/h generating capacity.

LG Chem to Provide Batteries to U.S. Component Maker

14. South Korea's LG Chem Ltd. said on January 5 that it will begin supplying lithium-ion batteries for commercial hybrid electric vehicles (HEVs) to Eaton Corp., a U.S. commercial vehicle components maker in November 2010. LG Chem plans to expand the assembly line of Compact Power Inc., its U.S. unit, in anticipation of increasing its supply of plug-in, rechargeable batteries to Eaton, the company said in a statement. Eaton dominates the U.S. commercial HEV component market, LG Chem said.

KEPCO to Install Electric Vehicle Battery Chargers in 2011

15. The Korea Electric Power Corporation (KEPCO), South Korea's sole electric utility provider, announced January that that it has successfully developed electric vehicle battery chargers that can be used by consumers at roadside fuel stations. The company said it had tested the reliability of the chargers on electric vehicle batteries that will be installed in Hyundai and Kia Motors electric vehicles. The KEPCO chargers offer a stable recharging capacity, credit card payment capability, and a face recognition function to prevent ID fraud using Radio Frequency Identification (RFID) cards. Although the company plans to work further on enhancing the function and design of the prototype, it said it expects to be able to install them in services stations in Seoul and along the nation's highways in 2011.

Regulations Eased for Electric Vehicles

16. In conjunction with its drive to encourage the manufacture and use of electric vehicles, the government is changing regulations that will make it easier for small "neighborhood" electric vehicles to be legally driven on the country's roads. The Ministry of Land, Transport and Maritime Affairs published a public notice on its website January 21 revising the Enforcement Decree of the Automobile

Management Act allowing owners of Neighborhood Electric Vehicles to be operated on designated roads in the country. Neighborhood Electric Vehicles are defined as electric-powered vehicles that weigh less than 1100 kilograms and have a maximum speed of 60 kilometers per hour. The vehicles will not be allowed to run on the country's highways or roads where the speed limit is above 60 km/hr.

Science & Technology

South Korea Aims to Export 80 Nuclear
Energy Reactors by 2030

¶7. According to the Office of the President, President Lee stressed that the nuclear power industry will become a new growth engine for

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the country. In keeping with that goal, the Ministry of Knowledge Economy (MKE) reported on January 13 that it has set an aggressive goal for Korea to export 80 nuclear reactors by the end of 2030, which would make Korea one of the world's top three suppliers of nuclear energy. Meeting that target would create more than 1.5 million new jobs in Korea, according to MKE. With its winning bid to export four reactors and build a nuclear energy power plant complex in the United Arab Emirates, Korea has become the world's sixth country to export nuclear energy reactors, joining the United States, Russia, France, Japan and Canada.

¶8. The government's long-term strategy plans include the domestic development of major core technologies such as reactor cooling systems, control instrumentation devices, and design code systems, currently supplied by foreign companies such as Westinghouse. To accomplish this strategy, the government will earmark USD 88.5 million for research and development on these technologies. The government also plans to join the private sector in investing USD 365 million by 2017 in R&D to expand the life expectancy of nuclear power plants from 60 to 80 years and to reduce reactor construction time from 52 to 36 months.

¶9. Government Proposes New Sejong City as a Science Hub
In a 2005 campaign pledge to promote balanced regional development and garner votes in a crucial swing region, then President Roh Moo-hyun promised to relocate nine central government ministries and four subsidiary agencies to the planned Sejong City, located in South Chungcheong Province, some 150 kilometers south of Seoul, beginning in 2012. The National Assembly passed controversial legislation in 2005 to implement Roh's campaign pledge. On January 11 of this year, the Lee Myung-bak administration announced plans to scrap Roh's plan. Prime Minister Chung Un-chan announced at a press conference that the government would propose instead turning the new city into a business and science hub by building an international science-business center and encouraging Samsung, Hanwha, Woongjin, Lotte, and Austrian solar energy developer SSF to build plants there and Korea University and the Korea Advanced Institute for Science and Technology (KAIST) to build new campuses there. The revised draft plan calls for investment of a total of 16.5 trillion won (USD 15 million) over the next 10 years about half from the government for construction of public facilities and half from the private sector for private construction.

¶10. In addition, the Ministry of Education, Science and Technology said it would build an international science belt on an 815-acre area in Sejong City with a total investment of 3.5 trillion won (USD 3.2 million) by 2015. The four key facilities to be located in the science belt include an international graduate school for science, a basic research institute, a heavy ion collider research center, and a nuclear fusion research institute. These facilities would enhance Sejong City's image as an international science center, the ministry said.

¶11. President Lee has the support of a majority of the ruling Grand National Party to revise the Sejong City plan, but party-rival and 2012 presidential contender Park Geun-hye is opposed. Lee's plan

cannot pass without the support of Park's faction. The likely outcome is a stalemate to be decided in the 2012 presidential election.

Korea's First Weather Satellite To Be Launched This Year

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¶12. South Korea plans to launch its first weather satellite in the first half of this year, hoping to enhance the speed and accuracy of its forecasting, the state-run Korea Aerospace Research Institute (KARI) said on January 13. According to the KARI press release, the maritime communication and weather satellite will be launched by Arianespace from the Guyana Space Center in French Guyana. It will be placed in geostationary orbit some 36,000 kilometers above the Korea peninsula, equipped with a multi-spectrum camera and sensor array that can closely monitor typhoons, ocean temperatures, and the movement of dust and cloud formations. It will be programmed to conduct up to 10 ocean meteorological observations a day and send this information to ground controllers on a real-time basis. Korea has already placed several remote sensing, scientific and communication satellites into orbit through Arianespace and other foreign space agencies. Its first attempt to domestically launch and place a satellite into orbit last July was unsuccessful. Another domestic launch is tentatively scheduled for late May 2010.

----- Health -----

Korean Scientists Discover New Alzheimer's Gene

¶13. A research team led by Dr. Suh Yoo-hun of Seoul National University and funded by the Ministry of Education, Science and Technology, has linked the human gene S100a9 as an underlying cause of Alzheimer's Disease. The team used an "advanced chip array method" to detect overly active gene manifestations in the S100a9 gene of Alzheimer's patients. In addition, the team also found that injecting laboratory mice genetically modified to have Alzheimer's Disease with RNA specifically designed to interfere with the S100a9 gene resulted in a reduction of memory loss and other symptoms associated with the disease. The discovery has been published in the latest issue of PLoS One, an international, Internet-based peer-reviewed publication.

New Rules on HIV Testing of Foreign Workers Causes Confusion

¶14. South Korea lifted its entry ban on HIV-positive foreigners effective January 1, 2010. However, the Ministry of Health, Welfare and family Affairs said Korea can still restrict reentry for HIV-positive individuals that have been deemed a threat to public health. In an interview with Expat Living, a Ministry of Justice official said foreigners already residing in the country can still be tested for HIV, and added, "originally, we deported foreigners who tested positive for HIV. And they were not allowed to reenter Korea. But in light of the January 1 announcement... if foreigners who work here test positive, we would not immediately deport them," the Ministry official said. "But as for foreigners who are judged by local medical centers as highly dangerous, we will impose restrictions on them." As for how someone who is HIV positive is judged to be "dangerous," the Justice Ministry official demurred. That determination is made by the Ministry of Health, Welfare and Family Affairs, he said.

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More Koreans Smoke

¶15. The Ministry for Health and Welfare Affairs recently said that the smoking rate for Korean people aged 19 or older increased by one percentage point, to 23.3 percent in 2009. The ministry surveyed 3,000 people by phone across the nation. The rate for males increased from 40.9 percent to 43.1 percent, and the rate for females decreased from 4.1 percent to 3.9 percent. Asked what caused them to smoke, 59.1 percent of all smokers said they smoke because it is a habit and 32.6 percent pointed to stress. In response to the rising smoking rate, the ministry plans to intensify anti-smoking efforts by designating more parks, hospitals, and other public facilities as smoking-prohibited areas. A Korean Development Institute study, meanwhile, found that indoor smoking prohibitions introduced in 2003 reduced the number of cigarettes smoked per day by 16 percent for the average smoker.

Profile

Korea Research Institute of Bioscience
and Biotechnology

¶16. Korea Research Institute of Bioscience and Biotechnology (KRIBB), founded in 1985, is the only Korean government research institute dedicated to biotechnology research across the full span of biological subject areas from basic studies on the fundamental phenomena of life to applied studies such as new drug discovery, novel biomaterials, and bio-information. Currently KRIBB has more than 1,000 full-time employees, including about 330 Ph.D. degree holders.

¶17. In June 2004, KRIBB established a joint collaboration center at its compound in partnership with the Fred Hutchinson Cancer Research Center (FHCRC) of the United States to develop biomarkers for early detection liver and stomach cancer. KRIBB and the FHCRC also teamed up with research institutes in Singapore, Taiwan, and China to launch the International Cancer Biomarker Consortium. KRIBB also has joint research programs with the University of Washington to develop platform technology for T cell therapy. Also, in June 2007 KRIBB formed a strategic alliance with Pfizer, under which KRIBB and Pfizer will undertake joint research projects to screen chemical compounds with the potential to control the NK immune cell and to identify suitable molecular targets for new liver and stomach cancer drugs.

¶18. Since its foundation in 1985, KRIBB researchers average over 300 published articles a year and have registered almost 400 patents at home and abroad. Recent efforts in commercialization have spun off over 80 venture companies and have successfully commercialized several discoveries.

STEPHENS